

REMARKS

In this paper, claims 1, 10, 20, 23, 24, 26, 34 and 37 have been amended and claims 14, 15, 30, 31 and 36 have been canceled.

Claims 1, 4, 6-10, 12, 16-17, 20, 23-26, 28, 32-35 and 37-38 are pending, with claims 6-9 having been withdrawn. Reconsideration of this application, as amended is requested.

Independent claims 1, 10, 26, and 34 have been amended to include the recitation that the composite includes a radiused portion adjacent the base. Independent claims 20, 23, and 24 already included this limitation.

112 Rejections

Claims 1, 4, 10, 12, 14-17, 20, 23-26, 28 and 30-38 were rejected under 35 U.S.C. 112, first paragraph, as allegedly being based on disclosure that is not enable. Applicants continue to disagree with the contention in the Office Action that having grinding aid in the composites is essential to the practice of the invention. To facilitate allowance of this application however, Applicants have included "grinding aid" to the structure of the abrasive composites.

Withdrawal of this rejection is requested.

103 Rejections

Claims 1, 4, 10, 12, 14-17, 20, 23-26, 28 and 30-38 were rejected under 35 U.S.C. 103(a) as obvious over Hoopman (U.S. Patent No. 5,672,097) in view of Neff (U.S. Patent No. 5,578,099), Adefris et al. (U.S. Patent No. 6,319,108) and Skeem et al. (U.S. Patent No. 6,817,936) alone or further in view of Wei et al. (U.S. Patent No. 5,833,724).

Claims 1, 4, 10, 12, 14-17, 20, 23-26, 28 and 30-38 were rejected under 35 U.S.C. 103(a) as obvious over Adefris et al. in view of Hoopman and Skeem et al. alone or further in view of Wei et al.

Claims 1, 4, 10, 12, 14-17, 20, 23-26, 28 and 30-33 were rejected under 35 U.S.C. 103(a) as obvious over Kaisaki et al. (U.S. Patent No. 6,194,317) in view of Skeem et al. alone of further inv view of Wei et al. Claims 34-38 were rejected as obvious over those references and further in view of Hoopman.

Applicants disagree with each of these rejections.

Various arguments have been made both by Applicants and by the Patent Office regarding the various teachings of these references and their combined teachings. Essentially, it is the Patent Office's currently position that it would have been obvious to one skilled in the art to combine the teachings of Hoopman (abrasive articles with a plurality of abrasive composites (comprising polymeric binder and abrasive particles) having various shapes, although there is no disclosure or suggestion of the composites having positive rake angles), Neff (a single point tool for material removal, the tool having a negative rake angle, a neutral rake angle, or a positive rake angle), Adefris et al. (porous ceramic abrasive composites having a positive rake angle with respect to the base), Wei et al. (abrasive particles on a surface), and finally Skeem et al. (a metal single layer cutting tool with a single row of variously shaped teeth).

As explained in the previous response dated November 14, 2006, the Office Action of June 14, 2006 added Skeem et al. to the long list of references needed by the Examiner to render an obviousness rejection, the disclosures of Hoopman, Neff, Adefris et al., Wei et al., and Kaisaki et al. and their various combinations having been previously discussed and rebutted by Applicants. The inappropriateness and lack of motivation to add Skeem et al., a metal single layer cutting tool with a single row of variously shaped teeth (basically, a saw) to these references was discussed in the response dated November 14, 2006.

What was not expounded on by Applicants in the November 14 response was the lackadaisical handling of the Office Action of the requirement of the composites having a radiused portion adjacent the base. This requirement is now recited in each of the independent claims.

The Office Action of June 14, 2006 stated that "with respect to the 'radiused section' . . . would have been obvious in view of the benefits of using a radiused section at the junction between feature and substrate surface (minimizes undercutting, thus protecting the abrasive grains). With respect to the motivation . . . the benefits defined by Skeem provide the necessary motivation to produce the shapes having a radiused section." The Office Action points to Figure 9 and the description of that figure in column 7, lines 13-20. Figure 9 shows a tooth having vertical side walls with a radiused portion adjacent the base (U). The text passage states that the rounded edges of the tooth provide the uppermost grains with protection from undercutting. These "uppermost grains" would be the grains at the upper most end (E). It is not understood how

rounded edges at the tooth junction with the substrate surface (U) would provide the uppermost grains with protection. The benefits defined by Skeem, which is the protection of the uppermost grains, are not motivation to produce the shapes of the pending claims.

The Office Action of June 14, 2006 takes liberties in stating a supposed benefit that "the use of a radiused section will minimize the retention of swarf at the junction between the feature and substrate surface." There is no support in Skeem et al. for this assertion. This benefit, of the radiused portion, is described in Applicants' application, at page 20, line 20-21. Applicants recognized this benefit of the lack of swarf retention; Skeem et al. only recognized protection of the uppermost grains, which, as described by Applicants' application, is not the intended benefit of the radiused portion.

The shapes of the pending claims include a rake angle (undercut) having the radiused portion; there is no motivation, based on protecting top grains, of including a radiused portion on a sidewall having an undercut. Applicants contend that attempting to use Skeem et al. as a motivation to add a radius portion adjacent the base of an undercut sidewall, is futile, as there is no benefit demonstrated or suggested for having such a feature in combination with the other requisite features.


Applicants contend, that at least for these reasons and those previously submitted, that the currently pending claims are not obvious over the various references combined by the Office Actions. Withdrawal of these rejections is requested.

SUMMARY

In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone Applicants' attorney Dan Biesterveld, Reg. No. 45,898, at 651.737.3193.

Respectfully submitted,

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